

FSK RTTY with the K3/0 Mini and Remote Rig Interface

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I use the Elecraft K3/0 Mini¹ and the Remote Rig RRC-1258 MkII² interfaces to access my own K3³ and also stations using the K3 on the Remote Ham Radio⁴ service. Getting FSK RTTY to work with the K3/0 Mini and various logging software in either case can be a real challenge. Add in a SteppIR controller at the K3 end and it gets even more complex. I was having a variety of problems attempting FSK RTTY but the toughest were related to using Writelog with the K3/0 Mini to access a K3 with the Remote Rig interface set. It took a lot of experimenting but I finally have the K3/0 Mini working completely with FSK RTTY and Writelog, as well as N1MM, DXLabs, and MMTTY whether accessing my home K3 with a SteppIR Controller or when accessing Remote Ham Radio stations (either Premium or WebDX). Here are the settings and connectivity that work for me:

General – all Loggers

On the K3 end, set:

- ☐ DATA MD=FSK D
- ☐ PITCH=915- 170 *note: set to your preference but match in MMTTY demodulator setting*
- ☐ MON to comfortable level in headphones

Note: when I use Remote Ham Radio I need to check this each time I connect since other users may have changed these settings on the K3.

RRC – Radio (K3) side

- ☐ K3 COM port connects to RRC box COM2. *Note: Nothing else. No ‘Y’ cable allowed! I made this mistake on my own K3 by connecting the “Y” cable for the SteppIR controller to the RRC box COM2 port. This caused Writelog to have an unacceptable delay before displaying frequency and mode changes.*
- ☐ SteppIR SDA100 controller Data IN /Radio port connects to RRC box COM 1. *A ‘Y’ cable here is OK if there are other devices which need to track or control the K3 frequency/mode. Moving my SteppIR cable to the RRC COM1 port eliminated the excessive delay with Writelog.*
- ☐ No USB cable should be attached to the Radio (K3) side RRC box.
- ☐ The K3 needs to have FSK POL =0 in the Config Menu, i.e. you need to invert the default FSK polarity to work properly with the RRC box.

¹ http://www.elecraft.com/K3-Remote/k3_remote.htm

² http://www.remoterig.com/wp/?page_id=995

³ <http://www.elecraft.com/K3/K3.htm>

⁴ <http://RemoteHamRadio.com>

□ RRC Configuration settings:

IO Settings: OUT1 mode =Baudot-RTTY/45
 OUT2 mode = Keyer

Radio settings: Audio dual-rx= Yes *note: only if you want to copy the subreceiver in one audio channel and the main receiver in the other audio channel. In Writelog and N1MM you can have multiple receive windows open with one decoding the right audio channel and another decoding the left audio channel. This does double bandwidth required so it takes a very good Internet connection.*

RRC – Control (K3/0 Mini) side

□ I do NOT use the RemoteRig Microbit virtual COM port to control the K3 as it has proven to be unreliable. Instead, I use an FTDI USB to Serial adapter from my PC USB port to the RRC box COM1.

□ Connect the cable from the RRC box mini USB port to your PC USB port. This will be used to provide a virtual COM port labeled 'COMFSK'. Look in your Device Manager to see which COM port number your logging program will use. For example:

RRC1258 COMFSK (COM8) means your logger uses COM8 for FSK.

□ RRC Configuration settings:

Radio settings: Use USB Com Port as COM0 =NO

Serial settings: COM1 mode = Mode-7, CAT to COM2 (remote)

COM2 mode = Logical parallel with COM0

Use USB Com Port as COM2 = NO

COM3 mode (USB-COMFSK) = Mode-10, Baudot-RTTY

IO settings: IN0 mode = Keyer

OUT0 mode = I/O

OUT1 mode = I/O

OUT2 mode = I/O

USB RTS as PTT = COM0

USB DTR as CW = COM0

SteppIR

If you have a SteppIR at the Radio (K3) side, be sure the K3 Configuration Menu setting AUTOINF = nor.

Software Specific

The K3/0 Mini has two sources of audio output: front panel "PHONES" headphone jack and side panel "SPKRS" jack. There is no provision for fixed level Line Out as there is with the K3. Whichever jack you plug into disconnects audio to the other jack. I use a 'Y' adapter to get audio from the K3/0 Mini SPKRS side port. I connect one leg of the "Y" to my PC Line In. I connect headphones to the other leg of the 'Y'. This is less than ideal since the two uses prefer different audio levels. I use the PC sound card mixer to reduce the Line In level to near minimum; this allows the K3/0 Mini AF to be adjusted for comfortable monitoring in the headphones.

MMTTY

Get MMTTY working standalone before trying Writelog RTTY using MMTTY.

In MMTTY:

- ☐ Demodulator → Mark=915, Shift=170 *note: whatever you prefer – just match the K3 PITCH setting*
- ☐ TX→PTT&FSK = COM8 *note: change to the virtual COM port designated in Device Manager for COMFSK.*
- ☐ Radio Command → Port = NONE
- ☐ Misc → Tx Port = COM-TxD(FSK) and USB Port → D: Polling and Limiting Speed *note: I use an EdgePort USB to Serial port and have not found it necessary to use EXTFSK but I suppose you could.*
- ☐ SoundCard → Select source of audio for reception. *note: I use my sound card 'Line In' and select Right Channel for Main Receiver decoding window and Left Channel for the Subreceiver decoding window.*

Writelog

Writelog is very fussy about the PTT settings. If not exactly as indicated for MMTTY, and Setup Ports below, PTT wouldn't work correctly and often led to a hang in key down requiring closing the RittyRite window. Not good☹

- ☐ Setup → Ports → COM3 = Elecraft K3, Baud Rate =9600, Poll=Y, Comm PTT = **NO**
note: change COM port to match your FTDI USB to Serial adapter, and Baud Rate to match settings in the two Remote Rig boxes.
- ☐ Setup → Ports → All mode PTT on RTS = NO i.e. NOT CHECKED! Very critical!
- ☐ RittyRite → TU Type = XMMT.ocx, then Browse to copy of MMTTY.exe which is set as above.
- ☐ RittyRite → Port = None
- ☐ RittyRite → Hardware Generated FSK checked, but greyed out (probably not relevant if Port=None)

N1MM

N1MM was much easier to configure for FSK RTTY. Here are the settings that worked for me:

- ☐ Config → Configure Ports etc → Com3=Elecraft K3, 9600, DTR and RTS=Always OFF
Note: change to match your FTDI USB to Serial adapter and baud rate setting on the K3/0 Mini
- ☐ Digital Column → No check marks
- ☐ Digital Modes → MMTTY Path: set to find your MMTTY.exe with settings as above.
- ☐ MMTTY Mode = FSK
- ☐ Digital Interface → RTTY Engine 1 → Option → Setup → TX → PTT&FSK=COM8
Note: change to match COMFSK assigned port number.
- ☐ Radio Command → Port = None

Remote Ham Radio

FSK RTTY is implemented on several of the RHR stations, but not all. Check with WW2DX for latest info. At the time of this writing, I have successfully used FSK RTTY on Quaker, Blueberry and W6/SanJoaquin. Taconic and possibly Monticello have FSK enabled in the RRC box setup but the FSK polarity in the K3 configuration menu is inverted. New stations are coming online every day and configurations are updated regularly so check with WW2DX if you are having trouble with FSK RTTY on RHR. Be sure to set DATA MD=FSK D and PITCH to match settings in MMTTY.